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REMARKS

Claims 1, 9, 10, 67 and 68 are amended. Claims 1-13 and 67-80 are pending in the application.

Claims 1-4, 7-13, 67-69, 71-74 and 77-80 stand rejected under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over Dunlop, U.S. Patent No. 5,590,389. Claims 5, 6, 75 and 76 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dunlop. The Examiner is reminded by direction to MPEP § 2131 that anticipation requires each and every element of a claim to be disclosed in a single prior art reference. The Examiner is further reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Each of claims 1-13, 67-69 and 71-80 are allowable over Dunlop for at least the reason that Dunlop fails to disclose or suggest each and every limitation in any of those claims.

As amended, independent claim 1 recites a physical vapor deposition target formed by a process comprising casting, equal channel angular extrusion (ECAE) and subsequently modifying a <220> crystallographic texture orientation by additional processing comprising at least one of cross-rolling and forging. The amendment to claim 1 is supported by the specification at, for example, page 22, lines 15-25; page 16, lines 15-25; page 13, lines 16-28; page 20, lines 11-25. Dunlop discloses performing equal channel angular extrusion in place of conventional rolling or forging processes (col. 7, ll. 51 through col. 8, ll. 2). Dunlop does not disclose or suggest the claim 1 recited target formed utilizing

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ECAE and subsequent enhancement of an axial oriented <220> or a planar oriented <220> crystallographic texture by additional processing comprising at least one of cross-rolling and forging. Further, since Dunlop teaches that ECAE can be used in place of conventional rolling or forging, there is no motivation for the recited target having enhanced axial or planar oriented <220> produced by the recited combination of ECAE and forging and or cross-rolling. Accordingly, independent claim 1 is not anticipated by or rendered obvious by Dunlop and is allowable over this reference.

Dependent claims 9 and 10 are amended to recite particular processing encompassed by independent claim 1. Such amendments are supported by the specification at those locations indicated for claim 1. Dependent claims 2-13 are allowable over Dunlop for at least the reason that they depend from allowable base claim 1.

As amended, independent claim 67 recites a physical vapor deposition target having second-phase precipitates having a maximum dimension of 0.5 μm , the target being formed by a process comprising ECAE which produces a microstructure, and aging to induce the second-phase precipitates which enhance stability of the microstructure. The amendment to claim 67 is supported by the specification at, for example, page 11, lines 14-19. Dunlop does not disclose or suggest aging or suggest the recited combining aging and ECAE. Further, Dunlop discloses that work pieces produced by the disclosed methods "exhibit few precipitate regions measuring more than 1 micron" (col. 6, ll. 19-23). Accordingly, Dunlop does not disclose or suggest the claim 67 recited target having precipitates present which have a maximum dimension of 0.5 micron. Accordingly, independent claim 67 is not anticipated by or rendered obvious by Dunlop and is allowable over this reference.

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Dependent claim 68 is amended to properly depend from claim 67. Dependent claims 68-69 and 71-80 are allowable over Dunlop for at least the reason that they depend from allowable base claim 67.

Dependent claim 70 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Dunlop in view of Segal, U.S. Patent No. 6,238,494. As discussed above, Dunlop does not disclose or suggest the claim 67 recited target comprising second phase precipitates having a maximum dimension of 0.5 micron, the target being produced by ECAE combined with aging to enhance stability of the microstructure produced by the ECAE. Segal is cited to show a sputtering target comprising silver as indicated by the Examiner at paragraph 12 of paper 4. Segal does not disclose or suggest the claim 67 recited target formed by ECAE combined with aging, the aging inducing second phase precipitates having a maximum dimension of 0.5 micron which enhances stability of a microstructure produced by ECAE. Accordingly, independent claim 67 is not rendered obvious by the combination of Dunlop and Segal and is allowable over this reference. Dependent claim 70 is allowable over the cited combination of Segal and Dunlop for at least the reason that it depends from allowable base claim 67.

For the reasons discussed above pending claims 1-13 and 67-80 are allowable. Accordingly, applicant respectfully requests formal allowance of pending claims 1-13 and 67-80 in the Examiner's next action.

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Respectfully submitted,

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By:

Jennifer J. Taylor
Jennifer J. Taylor, Ph.D.
Reg. No. 48,711